

6 amended) A method of watermarking an image comprising the steps of, applying a first material on a screen in a pattern that represents a digital watermark, projecting an image on said screen, said screen reflecting said image with different characteristics in the areas where said first material is located, whereby recordings of said projected image bear said digital watermark.

7 amended) The method recited in claim 6 wherein said screen is a movie theater.

8 amended) The method recited in claim 6 wherein a series of images comprising a movie is projected on said screen.

9) A method of watermarking recorded images comprising the steps of projected an image on a screen which has areas with different reflective characteristics in a pattern that represents a digital watermark, recording images from said screen, whereby the recorded images bear said digital watermark.

10) A material suitable for printing comprising a substrate and a layer of material positioned on said substrate in a pattern that represents a digital watermark, said material being invisible to the human eye and affecting any ink deposited on said substrate, whereby any image printed on said substrate will bear a digital watermark.

11) The method recited in claim 10 wherein said material is transparent.

12) The method recited in claim 10 wherein said material is a transparent wax.

13) The method recited in claim 10 wherein said printing is done by an inkjet printing process.

14) the method recited in claim 9 wherein a series of images comprising a movie are projected on said screen.

REMARKS:

This amendment is responsive to the Office Action dated 07/31/02.

Claims 1-14 are in this application.

Claims 6, 9 and 14 were allowed.

Claims 2, 3, 5 and 12 were allowed subject to specified corrections.

Claims 1, 4, 7, 8, 10 and 13 were rejected.

For the reasons explained below, allowance of claims 1-14, as amended, is respectfully requested.

The error in claim numbering which the examiner noted has been corrected.

Claims 7 and 8 have been amended to clearly establish an antecedent basis for the words "said screen".

Claims 1, 10 and 11 were rejected under 35 U.S.C. 103(a) based upon patent 4,591,707 (Stenzel). Applicant respectfully requests reconsideration of this rejection for the following reasons.

The Stenzel reference describes a technique for depositing what Stenzel calls "hallmarks" on paper carriers. The hallmarks are formed by material that is deposited on the paper carrier. Either visible or invisible material can be deposited to form the hallmarks. The hallmarks have the characteristic that they can be machine inspected or read. There can be printed material over or under the hallmarks. At column 3 lines 65 et. seq. the Stenzel reference states:

"The paper substrate can be printed before the hallmark is applied, or after hallmark application.

If the paper is printed after the hallmark has been applied, the printing has to be accomplished according to this invention in such a way that areas of the hallmark remain in which the specific properties can be measured free from any other influences or conditions, as may be created for instance by the printing ink.

This can be achieved by the use of suitable printing inks which are selected in such a way that the characteristic of the hallmark which is located underneath the printing ink can be measured without being influenced by the printing ink. As an alternative, the ink pattern is printed on the security in such manner that the hallmark is not completely covered, and uncovered, unprinted hallmark areas remain which allow an exact measurement of the characteristic hallmark feature free of any other parameters."

The important point is that Stenzel's "hallmark" does not influence the printed material. The hallmark is read independent from the printed material.

With the applicant's invention, a printed image is definitely influenced by the underlying coating. In fact the purpose of the applicant's technique is to influence the characteristics of an image printed or projected over an underlying coating. With the applicant's technique, first a pattern is deposited on a substrate. Then an image is printed or projected on top of the first pattern. The very purpose of the applicant technique is to influence the characteristics of an image printed or projected over an underlying layer. For example claim 1 recites a method to "watermark an image" and "printing an image". Claim 10 specifically recites "whereby any image printed on said substrate will bear a digital watermark".

Another difference between the Stenzel reference and the claimed invention involves the difference between "hallmarks" and "digital watermarks". The examiner has without foundation equated Stenzel's "hallmarks" to digital watermarks. As explained on page 1, line 6 et. seq. of applicant's specifications

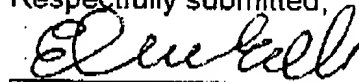
"There is a large body of art dealing with the technology for inserting digital watermarks into images and for reading such watermarks. In general the known techniques for inserting a digital watermark into an image involve changing some property of selected bits or pixels in an images. The pixels or bits are changed in a pattern that represents or carries certain data".

Inserting a digital watermark into an image involves changing the image such that data is steganographically carried in the image. Applicant's claims are specifically directed to "A method of watermarking an image" (claim 1) and claim 10 specifically recites "whereby any image printed on said substrate will bear a digital watermark". The Stenzel reference does have printed material printed over an underlying layer; however, Stenzel is specifically directed to insuring that the printing does not affect the readability of the underlying layer. There is not even any discussion in Stenzel of the underlying layer affecting the printed layer. In contrast the very heart of the applicant's technique involves "said image having different characteristics in the areas where said first material is located whereby said image bears a said digital watermark" from claim 1. Note that the whereby clause has been added to claim 1 by the above amendment to emphasize this point.

In summary, Stenzel teaches a first layer carrying a "hallmark" and then a printed layer. The printing in Stenzel is done so that it does not affect the hallmark. The hallmark in Stenzel does not affect the printed layer. With applicant's technique there is a first layer which is designed to specifically affects an image printed or projected over the first layer. The printed or projected image is "watermarked" by the underlying layer. This is directly contrary to the teaching in Stenzel.

For the above reasons, allowance of claims 1-14 as amended is respectfully requested.

Respectfully submitted,



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